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S/133/62/000/003/004/008
A054/A127

187520

AUTHORS: Gol'dshteyn, Ya. Ye., Candidate of Technical Sciences, Zel'dovich,
V. I., Keys, N. V., Kossovskiy, L. D., Vaynshteyn, O. Ya., Shmatko,
K. S., Engineers

TITLE: The effect of treating liquid chrome-nickel steel with cerium on its
crystallization

PERIODICAL: Stal', no. 3, 1962, 258 - 261

TEXT: Tests were carried out to study the effect of adding ferrocerium to
chrome-nickel structural steel on the flake formation and crystallization. The
tests were based on the chemical affinity of cerium to hydrogen, which increases
when the temperature is raised. As rare-earth metals mostly tend to adsorb hydro-
gen in the 200 - 600°C range, where the hydrogen separation from the metal is par-
ticularly intensive, this phenomenon can be used to reduce flaking. Four 40 kg
(40GN) steel ingots of the same melt were tested: one, checking specimen, with-
out ferrocerium, the others containing 0.1, 0.25 and 0.6% ferrocerium, respective-
ly. Lumps of ferrocerium, containing 94% rare-earth metal (primarily cerium)
were used. The ingots were top-cast and weighed 2.65 ton. Lateral macrotemplates,

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cut from blooms rolled from the test ingots, (air-dried after rolling, non-annealed) were analyzed after 1 and 6 months. Flakes were not found in templates from steel to which at least 0.6% ferrocerium was added. The analysis also showed that the effect of cerium (lanthanum, etc.) actually does not manifest itself in the adsorption of hydrogen, but rather in bonding it in the form of stable hydrides. In steel, containing as much as 3.7 cm³ hydrogen/100 g, there was no flaking, due to the addition of 0.6% ferrocerium, while flakes were found in steel containing not more than 0.56 cm³/100 g hydrogen, if not treated with cerium. When ferrocerium is added to the liquid steel in amounts above 0.25%, the pattern of dendritic crystallization changes and sulfur will be re-distributed in the micro-areas of the metal. High-smelting cerium-sulfides pass from the interaxial areas into the dendritic axes. When ferrocerium is added in amounts of up to 0.6%, dendritic crystallization disappears, and, under the effect of cerium, the steel is cleaned from sulfur, antimony, stannum, bismuth, lead, etc. 0.6% ferrocerium reduces the sulfur-content of the metal 5 times. However, when ferrocerium is added in the ingot mold, the cerium-sulfides (oxy-sulfides) cannot entirely be removed into the slag and the feeding head. This results in a nonhomogeneity of the boundary zone. The high-temperature cerium-sulfides (oxy-sulfides of intricate composition) are forming already in the period prior to crystallization

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and are moved to the ingot surface during the casting. The liquation in the boundary zone can be prevented by smooth, rather slow filling of the ingot mold from the bottom and by an increase of the head temperature. Cerium containing steel with a liquation in the boundary zone shows a tendency to red shortness. This can be reduced by adding ferrocerium in the ladle instead of in the ingot mold, or by roughing the ingot before rolling. The addition of ferrocerium in amounts of at least 0.25% prevents spotty liquation, because a greater part of sulfur is bonded in the form of cerium-sulfides with a high melting point. There are 5 figures and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Russel, Journal of Metals, no. 4, 1954, 438 - 442.

ASSOCIATION: Chelyabinskii nauchno-issledovatel'skiy institut metallurgii
(Chelyabinsk Scientific Research Institute of Metallurgy) and
Chelyabinskii metallurgicheskiy zavod (Chelyabinsk Metallurgical
Plant)

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ACCESSION NR: AR4027681

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 1G60

AUTHOR: Gol'dshteyn, Ya. Ye.; Zel'dovich, V. I.; Shmatko, K. S.

TITLE: Peculiarities of the effect of rare earth metals on the structure and properties of structural steels

CITED SOURCE: Sb. Teoriya i praktika metallurgii. Vy* p. 5. Chelyabinsk. 1963, 123-131

TOPIC TAGS: rare earth metal, structural steel, steel metallurgy, rare metal admixture, rare metal alloy

TRANSLATION: The authors have established the possibility of immunizing steel from flake formation by increased additions of REM (rare earth metals). Such treatment simultaneously increases the resistance to brittleness and hardenability of the steel. The mechanism of long-term effects of REM additions is associated with the high absorptive ability of cerium with respect to hydrogen, and possibly with the formation of stable cerium hydrides. The introduction of 0.25% REM into

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steel leads to the redistribution of sulfied in microvolumes of steel, as a result of which the high-melting cerium sulfides are localized in the dendrite axes and not in the interaxial spaces. The concomitant fragmentation of the dendrite crystallization is explained by the modification effect, as well as the purification of the melt of hydrogen, sulfur, and other admixtures. The maximum degree of disorganization of the dendritic crystallization is noted upon the introduction of increased portions of REM (0.6%). The purification of steels likewise promotes the removal of spot inhomogeneities. An important characteristic of steel treated with REM is the increased isotropism of its mechanical properties (yield point). The best results (the minimum anisotropy factor) are achieved upon the introduction of 0.25% ferrocerium. It was found that the optimal amount of REM additions depends on the thermal processing regime and the purpose of the steel; in the state following annealing and high-temperature tempering, an addition of 0.1% is optimal; in the state of low-temperature tempering it is 0.25% REM. The introduction of increased amounts of REM on the order of 0.4-0.6% for the elimination of flaking sensitivity of steel is permitted and is recommended only for alloyed steels to be annealed and quenched to low and medium temperatures. Such a dependence of the optimal REM addition on the conditions of subsequent thermal treatment is associated

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with the variable solubility of cerium in α -Fe. Studies have confirmed the theoretical possibility of active extra-furnace desulfuration of steel through the addition of REM. The introduction of 0.6% ferrocerium leads to a drop in the sulfur content (in the main ingot body) by a factor of 4-5. A disadvantage of the treatment of steel with rare-earth elements with the usual technology of their introduction and deoxidation of steel is the incomplete evacuation of the treatment products into the slag and the head metal of the ingot. The successful solution of the problem of the completeness of flotation of these products will essentially determine the rates of introduction of REM into structural steel production.

DATE ACQ: 03 Mar 64

SUB CODE: ML

ENCL: 00

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SHMATKO, M., saveduyushchiy.

More initiative and persistence. Kinomekhanik no.9:14-15 S '53.

(MLRA 6:9)

1. Otdel kinofiksii oblupravleniya kul'tury (Stalino).
(Stalino Province--Moving-picture distribution) (Moving-picture distribution--Stalino Province)

ACC NR: AP6034002-

(N)

SOURCE CODE: UR/0213/66/006/005/0770/0775

AUTHOR: Baranov, Ye. I.; Shmatko, M. A.

ORG: Kaliningrad Branch of the Institute of Oceanography, AN SSSR (Kalininogradskoye
otdeleniye Instituta okeanologii AN SSSR)

TITLE: Studies of the thermal structure in the Gulf Stream frontal zone

SOURCE: Okeanologiya, v. 6, no. 5, 1966, 770-775

TOPIC TAGS: oceanography, ^{ocean}temperature, hydrography, ~~automatic structural analyzer~~,
~~Gulf Stream~~

ABSTRACT: Continuous records are analyzed of surface water temperature obtained in March 1963 along the profiles running across the Gulf Stream frontal zone. Maximum values of horizontal temperature gradients are given. For the statistical characteristic of the temperature field in the Gulf Stream, frontal zone modular structural functions of temperature were computed with the aid of an automatic structural analyzer. Distribution functions have been computed to characterize the scales of temperature inhomogeneities. Orig. art. has: 5 figures.

SUB CODE: 00/ SUBM DATE: 13Nov64/ ORIG REF: 002/ OTH REF: 001

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UDC: 551.465.75:551.552(2628)

L 41360-65 EWP(k)/EWP(z)/EWA(c)/EWT(m)/EWP(b)/T/EWA(d)/EWP(t) Pf-4/Pad IJP(1
ACCESSION NR: AP4046095 JD/HW S/0126/64/018/003/0454/0456 z
z
z

AUTHOR: Kozyrskiy, G. Ya.; Larikov, L. N.; Petrunin, G. A.; Shmatko, O. A.

TITLE: The effects of the degree of deformation on polygonization and recrystallization of nickel [1]

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 3, 1964, 454-456

TOPIC TAGS: nickel deformation, polygonization, recrystallization, X ray analysis, metallographic examination

ABSTRACT: An investigation of the effects of deformation on the polygonization and recrystallization of Ni showed that the presence and the location of the point of intersection of the lines describing this relationship are conditional and affected by the choice of the quantitative characteristic of the two processes. Experiments were carried out with 99.99% pure Ni melted in argon. Specimens were compressed at different temperatures to 30-80%, annealed for 8 hrs. and examined by metallographic and X-ray method. The temperature at which the initial recrystallization nuclei attain 10^{-3} cm within eight hours was chosen as the quan-

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ACCESSION NR: AP4046095

titative characteristic for recrystallization and for polygonization--the temperature at which interference spots narrow by 25%. In Ni compressed by 80% the initial 10^{-3} cm nuclei appear at 280 C and X-ray interference lines narrow by 20%. The findings of the authors stand in good agreement with other papers. Orig. art. has: 3 figures

ASSOCIATION: Institut metallofiziki AN UkrSSR (Institute of Metal Physics, AN UkrSSR)

SUBMITTED: 15Oct63

ENCL: 00

SUB CODE: MM

NO REF SOV: 007

OTHER: 003

CC
Card 2/2

SMOLYAK, L.G.; SHMAT'KO, P.I.

Remote results of surgical treatment of acute intestinal obstruction.
Sov.med. 18 no.6:6-8 Je '54. (MIRA 7:6)

1. Iz gospital'noy khirurgicheskoy kliniki (sav.prof. R.V.Bogoslavskiy) Stalinskogo meditsinskogo instituta (dir. A.M.Ganichkin)
(INTESTINAL OBSTRUCTION, surgery
*remote results)

ALIMARIN, I.P.; BORZENKOVA, N.P.; SHMATKO, R.I.

Hydroxamic acids as analytical reagents. Report No.1:
Spectrophotometric study of the reactions of titanium
with benzohydroxamic acid. Zhur. anal. khim. 18 no.3:
342-347 Mr'63. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SVET-MOLDAVSKIY, G.Ya.; SHMATKO, R.V.

Utilizing Nartsissov's active complement fixation reaction for the serological diagnosis of typhus; preliminary report. Zhur.mikrobiol. epid. i immun. 27 no.6:84-85 Je '56. (MLRA 9:8)

1. Iz Rostovskogo-na-Donu instituta epidemiologii, mikrobiologii i gigiyeny.

(COMPLEMENT FIXATION) (TYPHUS FEVER)

ROMANOVA, V.P.; PETROVSKIY, I.N.; SENOVA, A.G.; NIKOL'SKAYA, T.A.; SHMATKO,
A.V.; ZONENEC, A.A.; BALABAHOVA, V.I.; LIPARSKAYA, V.G.; KERAT'YAK,
N.N.; KOMPAMETS, Ye.M.

Outbreak of Q fever in the Krasnodar Province. Zhur.mikrobiol.epid. i
sanit. 28 no.6:29-33 Je '57. (MIL 10:10)

I. iz Rostovskogo instituta epidemiologii, mikrobiologii i gигиены,
nafery infektsionnykh bolezney Rostovskogo meditsinskogo instituta,
Rostovskogo instituta Ministerstva zdravookhraneniya SSSR i Oblastnoy
kraevoy sanitarno-epidemiologicheskoy stantsii
(Q FEVER, epidemiology,
in Russia (Rus))

L 20620-66 EWT(m)/FCC/T IJP(e)

ACC NR: AP6009720

SOURCE CODE: UR/0386/66/003/004/0186/0190

AUTHOR: Borzhkovskiy, I. A.; Volovik, V. D.; Kobizskoy, V. I.; Shmatko,
Ye. S.

ORG: Khar'kov State University im. A. M. Gor'kiy (Khar'kovskiy
gosudarstvennyy universitet) 34

TITLE: Measurements of polarization of coherent radio emission of
extensive air showers 19 B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v
redaktsiyu. Prilozheniya, v. 3, no. 4, 1966, 186-190

TOPIC TAGS: extensive air shower, radio emission, Cerenkov radiation

ABSTRACT: Measurements of coherent radio emission of extensive air
showers have shown that it is possible to record such radiation. The
possibility had been predicted in works in which coherent radio emission
due to an electron excess was studied. An electron excess appears
during the development of an electron-photon avalanche in an extensive
air shower, and its emission is ordinary Cerenkov radiation character-
ized by radial polarization. The charges of an extensive air shower
can be separated by means of the Earth's constant magnetic field.

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ACC NR: AP6009720

However, in this case, radiation due to a magnetic retardation, dipole radiation, and radiation of the current will appear. This radiation is polarized primarily in the plane of the moving electron cluster, i.e., in the east-west direction. Experiments on the separation of radio emission polarized in the east-west direction from Cerenkov radiation showed only that coherent radiation is linearly polarized in the east-west direction. However, detection of linear polarization of radio emission of an extensive air shower in the east-west direction does not make it possible to determine the nature of the radiation. Orig. art. [JA] has: 2 figures.

03,09,20
SUB CODE: SUBM DATE: 11Jan66/ ORIG REF: 003/ OTH REF: 003
ATD PRESS: 4124

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BK

ACC NR: AP6033680

SOURCE CODE: UR/0048/66/030/010/1705/1707

AUTHOR: Borzhkovskiy, I. A.; Volovik, V. D.; Shmatko, Ye. S.

ORG: Khar'kov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Measuring the coherent radio emission of extensive air showers of cosmic rays

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 10, 1966, 1705-1707

TOPIC TAGS: cosmic ray, cosmic ray shower, ~~extensive air shower~~ radio emission, dipole antenna, meteorologic radar

ABSTRACT: Experimental results on the coherent radioemission of extensive air showers of cosmic rays are reported. Measurements were made using a system which included 24 east-west oriented dipoles. The effective area of the antenna was 950 m^2 ; the minimum received threshold of radioemission was $10^{-23} \text{ W} \cdot \text{m}^{-2} \cdot \text{cps}^{-1}$. After amplification, detection, and discrimination the antenna signal passing through a delay line was applied to Geiger-Meuller counters with the counting rate of $4.5 \text{ showers/hour}^{-1}$. Flashes of Cherenkov light were registered by two FEU-44 photomultipliers, which were installed 46 m from the center of the antenna. The viewing angle of the light receivers was 90° and the minimum threshold sensitivity was $400 \text{ photon} \cdot \text{cm}^{-2}$. Measurements were made at $\lambda = 23.6 \text{ m}$ during clear moonless nights only. During 42 hours of operation, 36 radio pulses from extensive air showers were registered. The system was operated with Geiger-Mueller counters for 40 hours. Only 3 pulses were recorded

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during that period. The authors conclude that signals with energy $> .6 \times 10^{18}$ ev were effectively registered. Orig. art. has: 2 figures.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 006/

Card 2/2

ZHURAVOK, I.S., prof.; SHMATKO, Yu.G. [Shmatko, IU.H.], kand.sel'skokhoz. nauk, red.

[Organization of breeding work on livestock farms] Organizatsiia plemennoi roboty na tvarynnys'kykh fermakh. Kyiv, 1958. 37 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.3, no.24) (MIRA 13:1)
(Stock and stockbreeding)

KOLONIY, Vladimir Panteleymonovich [Kolonyi, V.P.], kand.biol.nauk; SHMATKO, Yu.G. [Shmatko, Yu.H.], kand.sel'skokh.nauk, red.; TUBOLEVA, M.T. [Tuboleva, M.T.], red.

[How a collective farm increases the output of livestock products; practices of the Shevchenko Collective Farm, Uman District, Cherkassy Province] IAK kolhosp zbil'shuis vyrobnytstvo tvarynnys'koi produktsii; z dosvidu kolhozpu im. Shevchenka, Umans'koho raionu, na Cherkashchyni. Kyiv, 1958. 37 p. (Tovarystvo dlia poshyrennia politychnykh znan' Ukrains'koi RSR. Ser.3, no.11) (MIRA 12:2)

(Stock and stockbreeding)

OSADCHUK, Aleksandr Danilovich [Osadchuk, O.D.]; SHMATKO, Yu.G., kand.
sil'skoh.nauk, red.

[Turkey breeding] Rozvedennia indykiv. Kyiv, 1958. 41 p.
(Tovarystvo dlia poshyrennia politychnykh i naukovykh znan'
Ukrains'koi RSR. Ser.3, no.23) (MIRA 12:2)
(Turkeys)

KOLESNIK, Nikolay Nikitich [Kolesnyk, M.M.], prof., doktor biolog.nauk;
SHMATKO, Yu.G. [Shmatko, Iu.H.], kand.sel'skokhoz.nauk, glavnnyy red.

[Breeding work as an important tool in increasing the productivity
of animals] Pleminna robota - vazhlyyyi zakhid u pidvyshchenni
produktyvnosti tvaryn. Kyiv, 1959. 33 p. (Tovarystvo dlia poshy-
rennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.6,
no.12) (MIRA 12:12)

(Stock and stockbreeding)

PAKHUCHIY, Vasiliy Moiseyevich [Pakhuchyi, V.M.], kand.sel'skokhoz.nauk;
SHMATKO, Yu.G. [Shmatko, IU.H.], kand.sel'skokhoz.nauk, glavnnyy
red.

[Corn and protein feed in the rations of dairy cattle] Kukurudza
ta bilkovi kormy v ratsionakh molochnykh koriv. Kyiv, 1959.
40 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan'
Ukrains'koi RSR. Ser.6, no.18) (MIRA 13:1)
(Dairy cattle--Feeding and feeds)

LITVIN, Stepan Gavrilovich, kand.sel'skokhoz.nauk; SHMATKO, Yu.G.
[Shmatko, IU.H.], kand.sel'skokhoz.nauk, glavnnyy red.

[Ways of increasing the production of vegetable feeds rich
in proteins] Shliakhy zbil'shennia vyrobnytstva roslynnyykh
bilkovykh kormiv. Kyiv, 1959. 78 p. (Tovarystvo dlia poshy-
rennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.6,
no.23/24).

(Ukraine--Forage plants) (Proteins)

PIKUS, Grigorij Pimenovich [Pikus, H.P.]; ~~SEMATKO, Yu.G.~~ [Shmatko, IU.H.], kand.sel'skokhoz.nauk, glavnnyy red.; FAL'KO, Yu.G. [Fal'ko, IU.H.], red.

[Practices of the collective farm in establishing a stable feed supply] Dosvid kolhospu po stvoreniiu mitsnoi kormovoi bazy. Kyiv, 1960. 30 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.6, no.16).

(MIRA 14:2)

(Odessa Province--Feeds)

16.3200

28719
S/022/61/014/003/003/008
D201/D304

AUTHOR: Shmatkov, A.A.

TITLE: Evaluation of biholomorphic projections of limited areas

PERIODICAL: Akademiya nauk Armianskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 14, no. 5, 1961,
43 - 49

TEXT: (This article was reported at the 5th All-Union Conference of the Theory of Functions of Complex Variables, held in September 1960 at Yerevan). The author attempts to find a criterion for evaluating the change of volumes and that of the angles in biholomorphic projections of the limited areas of space with n complex variables. This is stated in two theorems. The author then defines by a complex m - volume, a volume \tilde{v}_m contained between vectors $\Omega_k \{w_1^{(k)} \dots w_n^{(k)}\}$ ($k = 1, \dots, m$) in a hermitian matrix, determined by an element of the length

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$$ds^2 = \sum_{p,q=1}^n T_{pq} dz_p dz_q,$$

$$\tilde{v}_m = \begin{vmatrix} \Omega_1 \bar{\Omega}_1 & \Omega_1 \bar{\Omega}_2 & \dots & \Omega_1 \bar{\Omega}_m \\ \Omega_2 \bar{\Omega}_1 & \Omega_2 \bar{\Omega}_2 & \dots & \Omega_2 \bar{\Omega}_m \\ \dots & \dots & \dots & \dots \\ \Omega_m \bar{\Omega}_1 & \Omega_m \bar{\Omega}_2 & \dots & \Omega_m \bar{\Omega}_m \end{vmatrix} \quad (1.1)$$

where $\Omega_i \bar{\Omega}_j = \sum_{p_i, p_j=1}^n T_{p_i \bar{q}_j} \omega^{(i)}_{p_i} \bar{\omega}^{(i)}_{q_j} =$

the scalar product of vectors Ω_i and $\bar{\Omega}_j$, and $T_{pq} = T_{qp}$. This volume was used in analyzing Euclidean and Bergmann matrices. The

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geometrical meaning of a complex m volume is given as follows: Assuming $\theta_{m,12\dots(m-1)}$ to be a minimum of the first analytical angle θ between the vector Ω_m and the analytical hyperplane of the $(m-1)$ order, containing vectors $\Omega_1, \Omega_2, \dots, \Omega_{m-1}$ as they appear in a hermitian matrix, then

$$\tilde{v}_m^2 = |\Omega_1| |\Omega_2| \dots |\Omega_m| \cdot \sin\theta_{2,1} \cdot \sin\theta_{3,2} \dots \sin\theta_{m,12\dots(m-1)} \quad (1.6)$$

and hence

$$\sin^2 \theta_{m,12\dots(m-1)} = \frac{\tilde{v}_m^2}{\tilde{v}_{m-1}^2 \sum_{p_m, q_m=1}^n T_{p_m q_m} \rho_m^{(m)} \rho_m^{(m)}}. \quad (1.7)$$

Eq. (1.6) is a generalization for the volume C^n in the sense of an ordinary volume, contained between vectors m in the space n of the real variables R^n . It follows for a Euclidean matrix that

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$$\sin^2 F_{m,12\dots(m-1)} = \frac{v_m^2}{\sum_{p_m=1}^n |w_{p_m}^{(m)}|^2}. \quad (1.8) \quad \checkmark$$

where $F_{m,12\dots(m-1)}$ is the respective angle measured in Euclidean geometry. The author considers a determinant

$$\left| \begin{array}{cccc} K & \sum_{q_1=1}^n w_{q_1}^{(1)} K_{q_1}^* & \dots & \sum_{q_m=1}^n w_{q_m}^{(m)} K_{q_m}^* \\ \sum_{p_1=1}^n w_{p_1}^{(1)} K_{p_1}^* & \sum_{p_1,q_1=1}^n w_{p_1}^{(1)} w_{q_1}^{(1)} K_{p_1 q_1}^* & \dots & \sum_{p_1,q_m=1}^n w_{p_1}^{(1)} w_{q_m}^{(m)} K_{p_1 q_m}^* \\ \vdots & \vdots & \ddots & \vdots \\ \sum_{p_m=1}^n w_{p_m}^{(m)} K_{p_m}^* & \sum_{p_m,q_1=1}^n w_{p_m}^{(m)} w_{q_1}^{(1)} K_{p_m q_1}^* & \dots & \sum_{p_m,q_m=1}^n w_{p_m}^{(m)} w_{q_m}^{(m)} K_{p_m q_m}^* \end{array} \right|.$$

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where $K''_{pq} = \frac{\partial^2 K}{\partial z_p \partial z_q}$, where K is the kernel function of the area D.

It follows that for a complex volume m, in the case of Bergmann's matrix, that

$$\tilde{v}_m^2 K^{m+1} = \delta_{m+1}. \quad (1.9)$$

This expression also holds for any Keler matrix of the potential $d_n k$ (where k could or could not be a kernel function of any area).

Next the author defines the quantities of $T_{pq}(D)$, $\tilde{v}_m(D)$ calculated from Bergmann's matrix for a hypersphere

$$\left[\sum_{k=1}^n /z_k/^2 \leq R^2 \right],$$

and also considers a class $L_2(D)$ of the functions f(z), holomorphic in the area (D) for which $\|f\|_D = \int_D /f/^2 d\omega < \infty$, where $d\omega$ is

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the element of volume. The author tries to obtain a minimum $\|f\|_D$ for the functions $f \in L_2(D)$. This minimum, denoted by J_k , has the values

$$\begin{aligned} J_1 &= \frac{1}{K}; & J_2 &= \frac{1}{K \sum_{p_1, q_1=1}^n T_{p_1 \bar{q}_1} w_{p_1}^{(1)} \bar{w}_{q_1}^{(1)}}; \\ J_3 &= \frac{\sum_{p_1, q_1=1}^n T_{p_1 \bar{q}_1} w_{p_1}^{(1)} \bar{w}_{q_1}^{(1)}}{K v_1}; & \dots; & J_{m+1} = \frac{\bar{v}_2}{K v_m}. \end{aligned} \quad (1.12)$$

The calculations are made for a point $P(z^0)$ using Eq. (1.9). As criterion for the biholomorphic projections of the limited areas, any point $P(z^0)$ is taken inside a limited area D . At this point the beginning of the coordinates are taken, denoted by h - the smallest, H - the greatest distance from this point P up to the limits

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of the area D. The author considers next a system of functions

$$w_k = f_k(z_1, \dots, z_n) \quad (k = 1, \dots, n) \quad (2.1)$$

holomorphic in the area D of the space C^n , a holomorphic projection of the area D on the area D^* assuming P^* to be the projection of the point P, and h^* the smallest distance from P^* to the limit of D. Two theorems are given and proven. Theorem 1: With any biholomorphic projection of $w_k = f_k(z_1, \dots, z_n)$ ($k = 1, \dots, n$) of the limited area D on the area D^* the following inequality is satisfied.

$$\left(\frac{h \cdot h^*}{H \cdot H^*} \right)^{mn} \left(\frac{h^*}{H} \right)^m \cdot v_m < v_m^* < \left(\frac{H^* \cdot H}{h \cdot h^*} \right)^{mn} \left(\frac{H^*}{h} \right)^m \cdot v_m. \quad (2.2)$$

v_m^* - is the magnitude of the volume after the projection is made.

Theorem 2: With a biholomorphic projection of $w_k = f_k(z_1, \dots, z_n)$ ($k = 1, \dots, n$) of the limited area D^* , there is an irregularity

Card 7/8

Evaluation of biholomorphic ...

S/022/61/014/003/003/008
D201/D304

$$\left(\frac{h \cdot h^*}{H H^*} \right)^{m(2n+1)} \cdot \sin F_{m, 12\dots(m-1)} \leq \sin F_{m, 12\dots(m-1)}^* \leq \\ \leq \left(\frac{H \cdot H^*}{h^* h} \right)^{m(2n+1)} \cdot \sin F_{m, 12\dots(m-1)}. \quad (2.3)$$

where $\sin F_{m, 12\dots(m-1)}^*$ is the magnitude of $\sin F_{m, 12\dots(m-1)}$ after the projection. There is 1 Soviet-bloc reference.

ASSOCIATION: Vsesoyuznyy zaochnyy mashinostroitel'nyy institut
(All-Union Correspondence Course Institute for Machine Construction)

SUBMITTED: January 2, 1961

Card 8/8

SHMATKOV, A.A.

A class of quasi-holomorphic mappings. Izv. AN Arm. SSR. Ser.fiz.-
mat.nauk 18 no.2:26-31 '65. (MIRA 18:6)

1. Moskovskiy institut elektronnogo mashinostroyeniya.

SHEVATKOV, N.A., Cand Tech Sci -- (diss) "Study of the ~~operation~~
of suspension compensating devices ~~in~~ multicable lifting
~~machines.~~" Stalin. o, 1959, 16 pp (Min of Higher ~~Education~~
UkSSR. Donets Oster of Labor Red Banner Industrial Inst)
120 copies (KL, 34-59, 115)

*
- 62 -

SHMATKOV, N.A., inzh.

Efficiency of balancing device suspensions on multibucket hoists
set at end positions. Nauch. dokl. vys. shkoly; gor. dele no.1:
139-144 '59. (MIRA 12:5)

1.Predstavlena kafedroy gornoy mekhaniki Khar'kovskogo gornogo
instituta. (Mine hoisting) (Balancing of machinery)

SHMATKOV, N.A., inzh.

Using balance gears on multirope hoisting equipment. Ugol' Ukr. 3
no.4:22-25 Ap '59. (MIRA 12:?)

1. Institut gornogo dela AN USSR.
(Mine hoisting--Equipment and supplies)

SOV/122-59-4-10/28

AUTHOR: Shmatkov, N.A., EngineerTITLE: Investigation of Wire Rope Suspensions of Lifts
(Issledovaniye kanatnykh podvesok liftov)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 4, pp 42-46 (USSR)

ABSTRACT: The load distribution in multi-cable suspensions with spring-type load equalisers is determined by analysis on the assumption that non-uniformity is due to the three factors of differences in pulley diameters, initial lengths and moduli of elasticity. The largest flexibility of the equalising springs is clearly desirable but limited by size. Maximum differences in length, modulus and diameter are assumed on the basis of Russian and German studies (Nesterov, T.T., Symposium "Mnogokanatnyy Pod'yem" (Multi-Rope Lifting), Ugletekhizdat, 1958, and Lange, F., Bewehrung der Vierseilfoerderung, Glueckauf, 1951, Issue 39/40), to be 0.05%, 15% and 0.05%, respectively, and the cable overload must be limited to 30%. The equation for the spring stiffness so obtained is solved graphically. A family of curves for a four-cable lift is illustrated (Fig 1) showing a plot of the spring stiffness against the total length of the lift cable for each of a number of constant total loads.

Card 1/3

SOV/122-59-4-10/28

Investigation of Wire Rope Suspensions of Lifts

Balancing lever equalising mechanisms admit cable force differences due to the lever fulcrum bearing friction. When this is negligible, the main condition is an adequate freedom for the balancing lever and avoidance of lever rotation exceeding 60° , which limits the lever length to a minimum. The minimum required stroke of the lever end and the lever length are computed. The prevalent opinion that balancing levers should be installed either on the cabin or on the counterweight but not on both, is disputed. With levers on the cabin only, the cables on the counterweight side are said to be inadequately equalised. Experiments with a test rig (Fig 3) have shown that a system with balancing levers on both cabin and counterweight does not in practice yield an indifferent equilibrium. If at one end the lever reaches its limit, any ensuing lack of equalising returns the levers into their balancing position

Card 2/3

Investigation of Wire Rope Suspensions of Lifts SOV/122-59-4-10/28

after 5-7 lifting cycles. The positions of the balancing levers and the cable tensions were recorded (Fig 5).

There are 5 figures and 7 references, of which 5 are Soviet and 2 German.

Card 3/3

NESTEROV, P.P., prof.; SHMATKOV, N.A., inzh.

Equalizing rope tension in multirope hoisting equipment. Izv.vys.
ucheb.zav.; gor.zhur. no.5:87-100 '59. (MIRA 13:5)

1. Chlen-korrespondent AN USSR (for Nesterov). 2. Khar'kovskiy
gornyy institut. Rekomendovana kafedroy gornoj mekhaniki.
(Mine hoisting) (Wire rope)

SHMATKOV, N.A., kand.tekhn.nauk

Distribution of the load among the ropes in multirope hoisting equipment. Ugol'.prom. no.3:51-54 My-Je '62.

(MIRA 18:3)

1. Institut gornogo dela AN UkrSSR.

SHMATKOV, N.A., kand.tekhn.nauk; GARKUSHA, N.G., kand.tekhn.nauk

Instruments for measuring and inspecting the tension of the
wire ropes of multiple-rope hoists. Ugol.prom. no.5:42-46
S-0 '62. (MIRA 15:11)

1. Institut gornogo dela AN UkrSSR.
(Hoisting machinery--Testing)

SHABANOV-KUSHNARENKO, Yu.P., kand. tekhn. nauk; SHMATKOV, N.A., kand.
tekhn. nauk

Distribution of forces among the ropes of a multirope hoist in
fastening them jointly to the vehicles. Izv. vys. ucheb. zav.;
gor. zhur. 6 no.8:120-128 '63. (MIRA 16:10)

1. Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki
i vychislitel'noy tekhniki. Rekomendovana kafedroy gornoj
mekhaniki.

ACC NR: AP7005661

(A, N)

SOURCE CODE: UR/0413/67/000/002/0118/0118

INVENTOR: Shmatkov, N. A.; Barats, Yu. M.; Alekseev, A. K.; Pesok, V. I.;
Metlyakova, V. N.; Zubchenko, A. G.

ORG: None

TITLE: A pneumatic fluid number-generating display with decoder. Class 42, No. 190669 [announced by the Institute of Mining Mechanics and Technical Cybernetics im. M. M. Fedorov (Institut gornoy mekhaniki i tekhnicheskoy kibernetiki)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 118

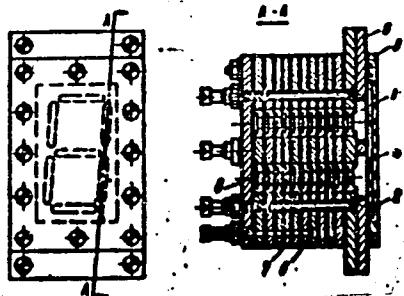
TOPIC TAGS: pneumatic device, number, digital decoder, ~~digital display equipment~~

ABSTRACT: This Author's Certificate introduces a pneumatic fluid number-generating display with decoder, consisting of the number-generating display itself, which contains rods and a guide plate with a transparent screen, and the decoder which is made in the form of a stack of plates with holes making communication channels together with diaphragms which have rigid centers. Clear number images of high contrast are produced by using a colored diaphragm separated from the transparent screen by an opaque fluid. Behind the diaphragm are rods which press the diaphragm against the screen.

UDC: 681.142-525

Card 1/2

ACC NR. AP7005661



1—rod; 2—flexible diaphragm; 3—transparent screen; 4—opaque fluid; 5—guide plates; 6—plate; 7—diaphragm; 8—rod

SUB CODE: 13, 1b / SUBM DATE: 19Jul65

Card 2/2

SHIATKOV, V. A., CAND TECH Sci, "EXPERIMENTAL AND THEORETICAL INVESTIGATION OF THE TORSION ^{STRUCT} _{bending} ^A ~~TEST~~ OF CERTAIN OPEN-TYPE THIN-WALLED BARS." NOVOCHEKASSK, 1961. (MIN OF HIGHER AND SEC. SPEC ED RSFSR. NOVOCHEKASSK ORDER OF LABOR RED BANNER POLYTECH INST IMENI S. ORDZHONIKIDZE). (KL-DV, 11-61, 223).

SHMATKOV, V.A.; CHIRKOV, A.A.

Pure torsion test for bars with a cross section in the form of a part
of ring. Trudy NPI 91:77-82 '60. (MIRA 14:5)
(Girders)

S/124/61/000/009/027/058
D234/D303

AUTHORS: Shmatkov, V.A. and Chirkov, A.A.

TITLE: On the problem of experimental and theoretical determination of rigidity in pure torsion of rods, whose cross-section has the form of a part of a circular ring

PERIODICAL: Referativnyy zhurnal Mekhanika, no. 9, 1961, 6,
abstract 9 V51 (Izv. vyssh. uchebn. zavedeniy.
Str. vo i arkhitekt., 1960, no. 4, 19-25)

TEXT: A description of the experimental determination of the rigidity in pure torsion of rods, whose cross-section has the form of a part of a circular ring. The authors concluded that in this case it is convenient to use Timoshenko's formula (Teoriya uprugosti (Theory of Elasticity), M.-L., ONTI, 1937):

$$I_d = \frac{84}{3} \left(\frac{l}{\delta} - 0.630 \right)$$

Card 1/2

On the problem of experimental...

S/124/61/000/009/027/058
D234/D303

introducing in it a correction factor $K = 0.960$ obtained by them.
Four specimens, with central angles of the cross-section of 30° ,
 60° , 90° and 120° were tested. [Abstracter's note: Complete trans-
lation]

Card 2/2

SHMATKOV, V.A.

Testing thin-walled rods with cross section resembling part of
an annular ring for flexure and torsion. Trudy NPI 117:35-44
'61. (MIRA 15:7)
(Elastic rods and wires)

L 3788-66

EWP(e)/EWT(m)/EPF(c)/EWP(i)/EWP(j)/T/EWP(h) WW/RM/WH

ACCESSION NR: AP5023215

UR/0374/65/000/004/0148/0151

678.5:539.3

AUTHOR: Shmatkov, V. A. (Novocherkassk); Zarif'yan, A. Z. (Novocherkassk);
Baranovskiy, Yu. I. (Novocherkassk)

TITLE: Investigation of mechanical properties of some graphitoplastics

SOURCE: Mekhanika polimerov, no. 4, 1965, 148-151

TOPIC TAGS: graphite, structural plastic, chemical resistant material, composite material

ABSTRACT: The object of the study was to determine some important mechanical properties of two brands of commercial graphitoplastics, ATM-1 and ATM-1-fine fraction, both being products of the Novocherkassk Electrode Plant. These two graphitoplastics are widely used for the manufacturing of chemical equipment. The ATM-1 graphitoplastic contains 33 wt % of coarse graphite, 49 wt % of graphite powder, and 18 wt % of binder. The binder is made of 83 wt % phenolformaldehyde resin Nr. 18, 11.1 wt % of technical urotropin, 3.9 wt % technical grade stearine, and 1.7 wt % calcium hydroxide. The physical characteristics of ATM-1 and ATM-1-fine fraction are: specific gravity--1.80 to 1.85 kg/cm³, specific electrical conduc-

Card 1/2

L 3788-66

ACCESSION NR: AP5023215

tance--70 to 150 ohm·mm²/m, thermal stability--up to 130°C, thermal conductivity--30 to 35 kcal/m·hr·°C, water absorption--0.01 to 0.10 g/100 cm² and impermeability to air up to 5 atm at 10 mm in thickness. Tensile-, compressive-, bending-, and shearing strengths are given for both materials in -50 to +115°C range. Young's moduli for tension and compression were determined at 20°C. Orig. art. has: 2 figures, 3 tables.

ASSOCIATION: none

SUBMITTED: 29Mar65

NO REF SOV: 005

ENCL: 00

SUB CODE: MT, GC

OTHER: 000

BC

Card 2/2

SHMATKOV, Ya.P., inzhener.

Mechanizing the bulk of work processes in the technical servicing of
buses , trolleys and taxis. Gor. khoz. Mosk. 27 no.6:20-25 Je '53.
(MIRA 6:6)

(Moscow--Motor bus lines) (Moscow--Taxicabs)

SHMATKOV, Ya.P., inshener.

New techniques in overhauling the M-20 "Pobeda" automobile.
Gor.khoz.Mosk.28 no.2:34-38 F '54. (MLRA 7:5)
(Automobiles--Maintenance)

SHMATKOV, Ya.P., inzhener; LABAZOV, B.N., inzhener.

Immediate measures for decreasing street and household noises in
Moscow. Gor.khoz.Mosk. 28 no.12:15-17 D-'54. (MIRA 8:3)
(Moscow--Noise)

SHMATKOV, YA.

SHMATKOV, Ya., inzhener.

Urban-type motor bus. Avt.transp. 32 no.5:10-12 My '54. (MLRA 7:7)
(Motor buses)

SHMATKOV, Ya.P., inzhener.

Some problems of garage construction in Moscow. Gor. khoz.
Mosk. 30 no.7:23-26 J1 '56. (MLRA 9:10)

(Moscow--Garages)

SHMATKOV, Ya.P., inzhener.

Further improvement in the utilization of passenger automobiles in
Moscow. Gor.khoz.Mosk. 31 no.9:27-31 S '57. (MIRA 10:9)
(Moscow--Automobiles--Maintenance)

SHMATKOV, Ya., inzh.

Using steel piston rings in repairing engines. Avt.
transp. 38 no.7:30-32 J1 '60. (MIRA 13:7)
(Automobiles--Engines)

ZELENKOV, V.V.; SHMATKOVA, M.P.; MASTITSKIY, Ye.P., kand.tekhn.nauk

Study of the TTZ-Gr theodolite. Sbor. nauch. trud. Kaz GMI no.19:
109-112 '60. (MIRA 15:3)

(Theodolites)

SHMATKOVA, N. P.

The chemical nature of yellow earthy pigments (ochers).
N. P. Shmatkova. J. Appl. Chem. U.S.S.R. 28, 655-60
(1955)(Engl. translation).—See C.A. 50, 1632i.
B. M. R.

AID P - 3566

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 3/20

Author : Shmatkova, N. P.

Title : The chemical nature of the yellow mineral dye

Periodical : Zhur. prikl. khim., 28, 7, 687-693, 1955

Abstract : The chemical nature of the chromophore and of the other constituents of yellow ocher has been investigated. The study of adsorption of ferric hydroxide by clays and by ocher and of the thermal dehydration of the samples led to the conclusion that the chromophore is $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$. Two tables, 4 diagrams, 10 references, all Russian (1922-1947).

Institution : None

Submitted : My 16, 1953

AUTHOR: SHMATLYUK, N.S., ABLYASKIN, I.N. PA - 3624
TITLE: A Machine for Winding Spiral Springs without a Mandrel.
(Stanok dlya bezopravochnoy navivki pruzhin, Russian)
PERIODICAL: Stanki i Instrument, 1957, Vol 28, Nr 6, pp 33 - 34 (U.S.S.R.)
ABSTRACT: In the machine factory of "Novo-Kramatorsk" a special machine for the winding of spiral springs without a mandrel was produced and used. Good results were obtained in that production was increased and the quality of the springs was improved. The machine is intended for the winding of cylindrical spiral springs with a diameter of 8 - 60 mm made from steel- or bronze wire having a diameter of 1 - 5 mm. Efficiency is due to the feed velocity of the wire - 12 m/min. The machine is driven by an electromotor of 2,8 kw and 706 revs/min. The machine weighs 570 kg. The wire is supplied in rolls of about 800 mm diameter. The machine has a device for the adjustment of the pitch of the spring, and can be used for the winding of both small quantities (5 - 10 springs) as well as for mass production of certain types and sizes. The excellent quality of the springs wound on this machine is praised, which is due to a suitable distribution of remaining stresses of the wire, which is more favourable than in the case of the usual winding method in which a mandrel is used. The construction of the machine is shown and explained. (5 illustrations)

Card 1/2

SHMATOK, E.G. (Asst Professor, Kiev Veterinary Inst)

"The Role of Wholesome Feeding in the Reproduction of Agricultural Animals"

Report given at 13th Inter-VUZ (Higher Educational Insts.) Scientific-Industrial Conference, held February, 1956, At Kiev Vet Inst.

SHMATOK, I. D.

Botany - Arctic Regions

Cultivation of vitamin-bearing plants under arctic conditions Biul. Glav. bot. sada No. 9,
1951

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

SHMATOK, I. D.

MD The biochemical characteristics of cow-parsnip and blan-

tert. I. D. Shmatok. Byull. Glavnogo Botan. Sada 1954,

No. 17, 85-9; Referat. Zhur. Khim., Biol. Khim. 1955, No.

2559.—The carbohydrate content is high in both plants.

They are recommended for the prepn. of silage fodder. B. S. Levina

SHMATOK, I. D.

USSR/Agriculture - Plant physiology

Card 1/1 : Pub. 22 - 45/48

Authors : Shmatok, I. D.

Title : Effect of mowing on the deposition of reserve substances in cow parsnip roots during the second year of life

Periodical : Dok. AN SSSR 97/5, 931-934, August 11, 1954

Abstract : Scientific report on the effect of mowing on the deposition of reserve substances in cow parsnip roots during the second year of life. Six USSR references (1937-1952). Table.

Institution : Acad. of Sc. USSR, Kolsk Branch, Botanical Garden

Presented by : Academician A. L. Kursanov, May 25, 1954

SHMATOK, I.D.

Mineral nutrition requirements of trees and bushes in polar conditions. Z. I. Zhurbitskii and I. D. Shmatok (S. M. Kirov Polar-Alpine Botan. Carden, Kirovsk-Murmansk). *Fisiol. Rastenii* 2, 465-75(1955).—In poor and cold soils typical of subpolar regions young trees and bushes show very slow rates of growth and development even with addn. of mineral nutrients, over the first 2 years of life. Such nutrition has to be regulated so as not to exceed the plant tolerance which is rather low until the end of the 2nd year. Tables of suggested levels of added fertilizers are given for several common species. G. M. Kosolapoff

SHMATOK E.D.

Effect of duration of the day under polar conditions on the content of carbohydrates and mineral substances in yellow acacia and lilac. I. D. Shmatok. *Doklady Akad. Nauk S.S.R.* 111, 213-10 (1956). Expts. In the region near Murmansk indicate that in yellow acacia the shortening of the daylight enriches all parts of the plant with N, P, and K, but lowers the Ca content, indicating more rapid aging of the leaves with the short day cycle; the effect on lilac is similar. Carbohydrate content is lowered in the leaves, with decline of starch only in the stems and the roots and increase of sol. sugars in these plant parts. Lilac showed a similar regularity. G. M. Kosolapoff

AVRORIN, N.A.; CHERNOV, Ye. G., SHMATOK, I.D.

Botanical investigations in Murmansk Province. Izv. Ker. i Kol'
fil. AN SSSR no. 1:72-83 '57. (MIRA 11:?)

1. Polyarno-al'piyskiy botanicheskiy sad Kol'skogo filiala AN
SSSR.

(Murmansk Province--Botany)

I-1

USSR / Plant Physiology. Respiration and Metabolism.

Abs Jour : Ref Zhur ... Biol., No 22, 1958, No 99901

Author : Shmatok, I. D.

Inst : AS USSR

Title : Seasonal Dynamics of Carotin in Plant Leaves Under Conditions
of the Far North

Orig Pub : Biol. Gl. Botan. Sode, AN SSSR, No 28, 62-65, 1957

Abstract : The leaves of 17 varieties of perennial herbaceous plants introduced in the Polar-Alpine botanic garden were investigated to determine their carotin content (by the colorimetric method). This content was found to range from 5 to 48 mg% for natural weight or 54 to 275 mg% for dry weight. The maximum values of carotin content in the leaves, as established by the author are one-and-a-half to three times as high as those mentioned in previous literature. Nearly all of the plants displayed an increase in their carotin content

Card 1/2

SHNATOK, I.D.

Chemical composition of wild onions raised in Murmansk Province. Biul. Glav. bot. sada no. 31:73-76 '58.

(MIRA 12:5)

1. Polyarno-al'piyskiy botanicheskiy sad Kol'skogo filiala AN SSSR.

(Murmansk Province--Onions)

SHMATOK, I.D.

Ascorbic acid content of some plants in the Polar-Alpine Botanical
Garden. Trudy Bot.inst.Ser.6 no.7:357-361 '59.
(MIRA 13:4)

1. Polyarno-al'piyskiy botanicheskiy sad Kol'skogo filiala
im. S.M.Kirova AN SSSR, Kirovsk.
(Kirovsk (Murmansk Province)--Plants--Chemical composition)
(Ascorbic acid)

SHMATOK, I.D.

Spatial dynamics of ascorbic acid in leaves of ephemeral plants.
Bot. zhurn. no.5:660-673 May '59. (NIIA T-11)

1. Polarno-isl'binskiy Botanicheskiy sad AN SSSR, g. Kirovsk.
(Ascorbic acid) (Murmansk Province--Plants, Effect of temperature on)

SHMATOK, I.D.; POYARKOVA, A.I.; AVRORIN, N.A.

In memory of Neonila Zenonovna Semenova-Tian-Shanskaia. Bot. zhur. 46
no. 5:745-746 My '61. (MIRA 14:7)

1. Polyarno-Al'piyskiy botanicheskiy sad Kol'skogo filiala AN
SSSR, Kirovsk i Botanicheskiy institut imeni V.L. Komarova
AN SSSR, Leningrad.
(Semenova-Tian-Shanskaia, Neonila Zenonovna, 1903-1960)

SHMATOK, Yefim Gerasimovich [Shmatok, IU, H.], kand.sel'skokhoz.nauk;
KOLESNIK, M.M., doktor biolog.nauk, otv.red.; GURENKO, V.A.
[Hurenko, V.A.], red.

[New developments in the care and maintenance of farm animals]
Nove v dohliadi i utrymanni sil's'kohospodars'kykh tvaryn.
Kyiv, 1960. 39 p. (Tovarystvo dlia poshyrennia politychnykh
i naukovykh znan' Ukrains'koi RSR. Ser.6, no.9).

(MIRA 13:8)

(Stock and stockbreeding)

KNIGA, Moisey Ivanovich [Knyha, M.I.], prof.; SHMATOK, Yu.G. [Shmatok, Yu.H.],
kand.sel'skokhoz.nauk, red.; YEROSHENKO, T.G. [Eroshenko, T.H.],
khudozh.-tekhn.red.

[Dairying] Molochna sprava. Kyiv, Derzh.vyd-vo sil's'kohospo-
dars'koi lit-ry URSR, 1960. 155 p. (MIRA 13:4)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni V.I.Lenina (for Kniga).
(Dairying)

SIMATOK, Yefim Gerasimovich [Shmatok, IU.H.], kand. sel'khoz.nauk;
GURENKO, V.A. [Hurenko, V.A.], red.; ZELENKOVA, E.F.[Zelenkva,
IE.F.], tekhn. red.

[Let us secure high livestock production with correct feeding]
Pravyl'noiu hodivleiu zabezpechymo vysoku produktyvnist' tvaryn.
Kyiv, 1961. 49 p. (Tovarystvo dlia poshyrennia politychnykh i
naukovykh znan' Ukrains'koi RSR. Ser.5, no.14) (MIRA 14:12)
(Stock and stockbreeding--Feeding and feeds)

SHMATOV, I.

Conference on establishing work norms in the chemical industry.
Biul.nauch.inform: trud i zar.plata 3 nc.2:38-41 '60.
(MIRA 13:6)
(Chemical industry--Production standards)

KUDRYA, N.P., LINDO, G.V., SHIBAIKOV, N.M.

Boron tests of SW-511OK roller bits reinforced with various
types of hard alloys. Bulletin no.1:14.21 '65. (MIRA 18:5)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh
splatov i Vsesoyuznyy nauchno-issledovatel'skiy institut barvovoy tekhniki.

SHMATOV, N.Ye., mekhanik-naladchik (Riga)

Improved mechanism for feeding material to drills. Put' i put.
khoz. no.9:37 S '58. (MIRA 11:9)
(Drilling and boring machinery)

SHMATOV, V., starshiy leytenant

Platoon against tanks. Voen. vest. 42 no.10:106-108 0 '62.
(MIRA 15:10)
(Antitank guns)

MALYSHEV, Yu. (Ufa); SHMATOV, V. (Ufa)

Evaluating the time element of capital investments. Vop. ekon.
no.3:143-146 Mr '62. (MIR^A 15:3)
(Capital investments)

L 34119-66 Lwr(e)/EWT(m)/EWP(j)/T IJP(c) DS/AM/RM/LH
ACC NR: AP6008958 SOURCE CODE: UR/0814/65/000/011/0031/0033
AUTHOR: Shmatkov, V. A. (Candidate of technical sciences); Zarif'yan, A. Z. (Candidate of
technical sciences); Baranovskiy, Yu. I. (Engineer)

ORG: None

TITLE: Study of the mechanical properties of impregnated graphites¹⁵

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 11, 1965, 31-33

TOPIC TAGS: graphite, phenolformaldehyde, bending strength, shear strength, tensile
strength, compressive strength

ABSTRACT: At the Strength of Materials Laboratory, Novocherkassk Polytechnic Institute
(laboratoriya soprotivleniya materialov Novcherkasskogo politekhnicheskogo instituta), the
mechanical characteristics of certain graphitized materials produced by the Novocherkassk
Electrode Plant (Novocherkasskiy elektrodnny zavod) were determined. The tensile, compres-
sive, bending, and shear strengths of EG electrode graphite and ZKhP fine-grained cold-pressed
graphite, both impregnated with phenol-formaldehyde resin¹⁵, were measured at -50, +20, +100,
and +150C. The elastic moduli in tension and compression were also determined at +20C. The
tests showed that impregnated EG and ZKhP graphites at 20C have elastic moduli and strength
characteristics that are close in magnitude to the characteristics of analogous materials pro-
duced by other plants in the Soviet Union and abroad. These graphites show a marked anisotro-
py of the mechanical properties. All their strength characteristics decrease markedly as the
temperature rises to 100-150C. Under load, failure occurs abruptly, without the development

UDC 620.17:546.26-162.001.2

53

B

Card 1/2

L 34119-66

ACC NR: AP6008958

of plastic strains. Orig. art. has: 3 figures and 3 tables.

SUB CODE: 11 / SUBM DATE: none / ORIG REF: 004

Card 2/2 *[Signature]*

SHMATOV, V. F.

11(0)

sov/93-58-10-17/19

AUTHOR: Samgullin, A.

TITLE: A Valuable Book on the Economics of Drilling (Tsennaya kniga po ekonomike burenija)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 10, pp 70-71 (USSR)

ABSTRACT: This is a review of the book "Rezervy snizheniya stoimosti burovых rabot" (Possibilities of Reducing the Cost of Drilling Operations) written by G.F. Shafigov, D.Sh. Davletbayev, and V.F. Shmatov and published by Gostoptekhizdat in 1958. The authors obtained their data from the Tuymazaburneft' Trust which carries out over 50 percent of the drilling work in the Bashkir ASSR.

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SIMTOV, Vasiliy Fedorovich; SHTEYNGAUZ, Yevsey Moiseyevich; SAMIKHOV,
Munir Minguzhevich; ISAYEVA, V.V., vedushchiy red.; POLOSINA,
A.S., tekhn.red.

[Potentialities in the use of boring machinery] Rezervy burovoi
tekhniki. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-topliv-
noi lit-ry, 1959. 13^{1/4} p. (MIRA 12:12)
(Boring machinery)

MAIYSHEV, Yu.M., kand. ekonom. nauk, otv. red.; SHMATOV, V.F., kand. ekonom. nauk, otv. red.; POROKOV, Yu.D., red.; SHAFIN, I.G., tekhn. red.

[Effectiveness of capital investments in petroleum production of the Bashkir A.S.S.R.] Effektivnost' kapital'nykh vlozhenii v neftedobychu i usushcheli promyshlennosti Bashkirskoi ASSR. Ufa, 1960. (MIRA 14:9) 105 p.

1. Akademiya nauk SSSR. Bashkirskiy filial, Ufa. Otdel ekonomiki promyshlennosti.
(Bashkiria—Petroleum industry—Finance)

SHMATOV, V.F., kand. ekon. nauk, red.; OSTASHEVSKAYA, G.A., red.;
PAZEY, S.I., tekhn. red.

[Problems relative to the effectiveness of capital investments in petroleum production] Voprosy effektivnosti kapital'nykh vlozhenii v neftedobychushchel promyshlennosti; sbornik statei. Ufa, Bashkirskoe knizhnoe izd-vo, 1960. (MIRA 16:8)

86 p.

(Petroleum production)

MALYSHEV, Yu.M.; SHIKHOV, V.V.; SHMATOV, V.F.

Problems of economics in the use of sulfur-bearing oils.
Khim. i tekhn. topl. i masel. 8 no.3:37-43 Mr '63.
(MIRA 16:4)

1. Bashkirskiy filial AN SSSR.
(Petroleum industry) (Petroleum—Refining)
(Sulfur compounds)

Ministry of Finance, Moscow, Russia

On behalf of the Minister of Finance in the preparation of the
participation of private enterprises in industrial enterprises.
U.S. Embassy, Moscow, dated 9 November 1993. (U.S.)

AM RA 10/4/93

U.S. Embassy, Moscow, dated 9 November 1993. (U.S.)

MALEKOV, Yu.M.; TSYBICHENKO, V.Ye.; SHMATOV, V.P.

Applicability of the normative cost index for processing in
the calculation of labor productivity in petroleum refining.
Loy. sys. ucheb. zav. neft' i gaz 7 no.9:116-120 '64.
(MCRA 17.12)

Moscow neft' i gaz institut.

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NUDEL'MAN, L.G.; Prinimali uchastiye: VERESHCHAGIN, Yu.F.; L'VOV, V.A.;
STELETSKIY, V.S.; KOVALENKO, A.D.; SIMAJOV, V.M.

Study of the strength and rigidity of a P313 sheet stamping
press bed. Kuz.-shtam.proizv. 7 no.2:27-33 F '65.
(MIRA 18:4)

APPROVED FOR RELEASE: 08/23/2000

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SHMATOV, V.T.

56-6-7/47

AUTHOR: Shmatov, V. T.

TITLE: On the Thermodynamical Theory of Relaxation Phenomena
in Systems With Additional Parameters (K termodinamicheskoy
teorii relaksatsionnykh yavleniy v sistemakh s dopolnitel'nymi
parametrami).

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957,
Vol. 33, Nr 6(12), pp. 1359-1362 (USSR)

ABSTRACT: The present paper deals with the further development of
the method suggested by Mandel'shtam and Leontovich (Ref. 1)
for the purpose of explaining acoustic absorption in liquids.
As additional internal parameter a quantity is here
described which characterizes a certain interior property
of the system. This interior property is a function of state
in the equilibrium of the system. The system investigated
here is characterized in equilibrium by the temperature T, by
the generalized force A (pressure, tension), and the hereto
conjugated coordinate a (volume, deformation) (which are
connected by means of an equation of state), and by a certain
additional interior parameter $\eta = \eta(T, a)$. Such a parameter
can e.g. be the degree of remote and near order, spontaneous

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On the Thermodynamical Theory of Relaxation Phenomena
in Systems With Additional Parameters

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magnetization, spontaneous electric polarization, the anti-ferromagnetic order, etc. With a modification of the state of the system with respect to time η assumes the values of $\eta \neq \eta_0(T,a)$ which do not correspond to equilibrium. Therefore, the system as a whole passes through states without equilibrium in which it is described by the free energy $F = F(T,a,\eta)$. In the equilibrium of the system it holds that $F_{\eta_0}(T,a,\eta_0) = 0$, $F_{\eta\eta} > 0$, where the subscript index denotes differentiation. For the modification of entropy in a state without equilibrium it holds that $TdS = dU + A da - F_{\eta_0} d\eta_0$, where $U(T,a,\eta_0)$ denotes the interior energy. The author then in linear approximation determines an equation for the modification with respect to time of η and then passes on to other variables. The dynamic derivatives for the period perturbation of the system with the frequency are then derived. At $\omega \rightarrow \infty$ the sub-system of those degrees of freedom which are responsible for the parameter properties which are characterized by the parameter η take no part in the modification of the state of the system. This sub-system is then isolated from the remaining degrees of freedom of

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SKROTSKIY, G.V.; SHMATOV, V.T.

Thermodynamic derivation of an equation of motion in the theory
of ferromagnetic resonance. Nauch. dokl. vys. skoly; fiz.-mat.
nauki no.1:136-137 '58. (MIRA 12:3)

1. Ural'skiy politekhnicheskiy institut i Ural'skiy filial AN SSSR.
(Ferromagnetism)

SKROTSKIY, G.V.; SHMATOV, V.T.

Thermodynamic theory of relaxations. Izv. vys. ucheb. zav.; fiz.
no.2:138-143 '58. (MIRA 11:6)

1.Ural'skiy politekhnicheskiy institut i Ural'skiy filial Akademii
nauk SSSR.
(Thermodynamics) (Statistical mechanics)

AUTHORS: Skrotskiy, G. V. and Shmatov, V. T. SOV/126-6-2-26/34
TITLE: Thermodynamical Derivation of Dynamic Susceptibility
(Termodynamicheskiy vyyvod dinamicheskoy vospriimchivosti)
PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 2,
pp 358-359 (USSR)

ABSTRACT: Consider a thermodynamic system which allows the appearance in a subsystem of degrees of freedom which are responsible for the phenomenon under investigation (Ref.1). The system which remains after the formation of the subsystem will be called a "thermostat" and its temperature T will be taken as constant. The process of transmission of heat from the subsystem to the thermostat will be called "external relaxation", and the approach of the inner parameter of the subsystem a to its equilibrium value corresponding to the generalised force A will be called "internal relaxation". When A varies, the work done on the subsystem is $A da$ and the subsystem reaches a non-equilibrium state characterised by a temperature T and a parameter a which do not satisfy the state equation. The equation of state in this case determines some value $A^* = f(T, a)$ which is

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Thermodynamical Derivation of Dynamic Susceptibility
 different from A. According to Ref.2 the change in the entropy of the subsystem in this case is given by

$$TdS_H = dU_H - Ada + (A - A^*)da,$$

where $S_H(T, a)$ and $U_H(T, a)$ are the entropy and the internal energy of the subsystem in a non-equilibrium state. The first two terms on the RHS determine the equilibrium part of the entropy change

$$T(dS_p) = dU_H - Ada, \quad (1)$$

and the last term determines the non-equilibrium part. According to Ref.3

$$T\Delta S = (A - A^*)\dot{a},$$

hence in the approximation of the thermodynamics of irreversible processes

$$\dot{a} = L(A - A^*) \quad (2)$$

Card 2/5 where $L > 0$ and $\dot{S} > 0$. For small deviations from the